

## Claims

1. A software-defined wireless communications device comprising:  
a hardware platform;  
platform software that controls an operating characteristic of the hardware platform;  
waveform software separate from the platform software, the waveform software including authorization tags providing authorization for the waveform software to execute on the hardware platform.
2. The communication device of claim 1, wherein the hardware platform and the platform software enforce limits encoded in the authorization tags to ensure that a RF emission from the communication device is below a specified limit when the waveform software is executed on the hardware platform.
3. The communication device of claim 1, wherein the waveform software can be ported to another hardware platform once the waveform software has been authorized for execution on a first platform.
4. The communication device of claim 1, wherein in the event of a change in the hardware platform, the platform software is reauthorized.
5. The communication device of claim 1, wherein the specified limit is at least one of a power level, a modulation characteristic and a frequency range.
6. The communication device of claim 1, wherein the waveform software includes a waveform description and the platform software includes a signal processing library, and wherein the waveform software is executed if the signal processing library contains the waveform description.
7. The communication device of claim 6, wherein the waveform description is certified if the waveform description is not compatible with the signal processing library of the platform software.
8. The communication device of claim 1, wherein the platform software is executed on a processor or memory subsystem different from the waveform software.

9. The communication device of claim 1, wherein the hardware platform is selected from the group consisting of an analog wireless phone, a digital wireless phone, a cordless home phone, and a wireless data transmission device.

10. Method of certifying a software-defined wireless communications device, comprising:

validating a signal processing library residing in the software-defined wireless communications device;

connecting the signal processing library at run time to an application program containing waveform descriptions;

enforcing limits on RF emission based on the waveform descriptions.

11. The method of claim 10, wherein the waveform descriptions further include authorization tags that define the limits on RF emission.

12. The method of claim 10, further including downloading additional waveforms descriptions that are compatible with the signal processing library.

13. The method of claim 10, wherein the limits on RF emission is at least one of a power level, a modulation characteristic and a frequency range.